

**REMARKS**

In the Office Action, the Examiner rejected Claims 1-14, which were all of the then pending claims, under 35 U.S.C. §102(e) as being fully anticipated by U.S. Patent 6,251,745 (Yu).

Applicants are herein amending independent Claims 1 and 8 to better define the subject matters of these claims. Claims 2-7 and Claims 9-14 are being amended to keep the language of these claims consistent with the language of amended Claims 1 and 8 respectively. Also, new independent Claim 15 is being added to define the invention in an alternate way, and Claims 16-18, which are dependent from Claim 15, are being added to describe preferred features of the invention.

For the reasons advanced below, Claims 1-16 patentably distinguish over the prior art and are allowable.

Both the present invention and Yu relate, generally, to photolithography processes, and both this invention and Yu discuss overlay tolerances. There is, however, a very important difference between this invention and Yu. Specifically, Yu is directed to measuring the overlay tolerance during the photolithography process, while the present invention is directed to determining a proper overlay tolerance for the photolithography process.

Applicants are herein amending claims 1 and 8 to clearly describe this difference:

In particular, Claim 1, which is directed to a method of determining a proper overlay tolerance in a photolithography process, is being amended to positively set forth the step of using a photolithographic process to form first and second layers of patterns on a wafer, with a set of the patterns of the second layer being overlaid, with an associated tolerance, with patterns of the first layer. Claim 1 also includes the step of varying this associated tolerance across the

wafer, and using functional yield data from the wafer to determine a proper overlay tolerance for the patterns of the first and second layers. Similar limitations are included in Claim 8, which is directed to a system for determining a proper overlay tolerance in a photolithography process, and in new Claim 15, which, like Claim 1, is directed to a method of determining a proper overlay tolerance in a photolithography process.

Determining the proper tolerance between these patterns is an important aspect of the lithographic process. As discussed in greater detail in the present application, a tolerance that is too low may significantly increase the cost and reduce the efficiency of the lithography process without any associated benefit in the operation or quality of the fabricated semiconductor. Tolerances that are too high may produce degraded product. The procedure of the present invention helps achieve an optimum balance between these considerations.

In addition to the foregoing, an important advantage of the preferred embodiment of the invention is that the proper tolerance for a variety of image sizes can be determined. In this embodiment of the invention, image size can be varied from wafer to wafer, yielding highly valuable information about the proper tolerance for each image size. Thus, the tool disclosed in the present application works for any image size. Yu, it may be noted, does not consider image size; only overlay patterns.

The other references of record have been reviewed, and, whether these references are considered individually or in combination, they are believed to be no more pertinent than Yu. In particular, these references do not teach the principal of determining a proper tolerance for overlay patterns in the manner described in Claims 1, 8 and 15.

Because of the above-discussed differences between Claims 1 and 8 and the prior art and because of the advantages associated with those differences, these claims patentably

distinguish over the prior art and are allowable. Claims 2-7 are dependent from Claim 1 and are allowable therewith; claims 10-14 are dependent from, and are allowable with Claim 9; and Claims 16-18 are dependent from Claim 15 and are allowable therewith.

For the reasons set forth above, the Examiner is respectfully requested to reconsider and to withdraw the rejection of Claims 1-14 under 35 U.S.C. §102, and to allow these claims and new Claims 15-18. If the Examiner believes that a telephone conference with Applicants' Attorneys would be advantageous to the disposition of this case, the Examiner is asked to telephone the undersigned.

Respectfully Submitted,

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